

A R D E N T

C O M P U T E R

THE
TITAN
GRAPHICS
SUPERCOMPUTER



 ARDENT COMPUTER



TITAN: A NEW CLASS OF COMPUTER

I *Imagine a supercomputer of your very own. A supercomputer that's an interactive partner helping you find optimal solutions to complex problems.*

Imagine real-time, 3D, full-color, high-resolution graphics for your results—every time you modify your data.

Imagine five times the performance of today's fastest graphics machine plus a quarter of a supercomputer at a workstation price.

Imagine Titan.

Titan™ is the first of a new class of computer: a graphics supercomputer. Pioneered by Ardent Computer, the Titan family combines

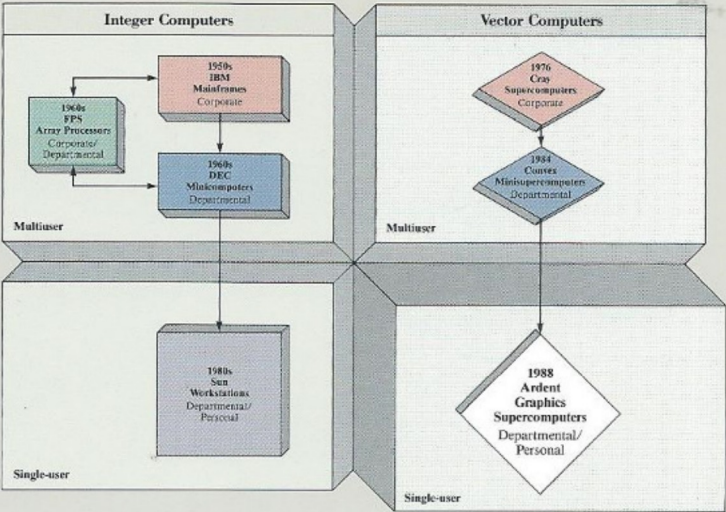
- ♦ Supercomputer-class 64-bit vector computation.
- ♦ Real-time visual interpretation of results.
- ♦ Interactive control of numerical processing and graphical output.

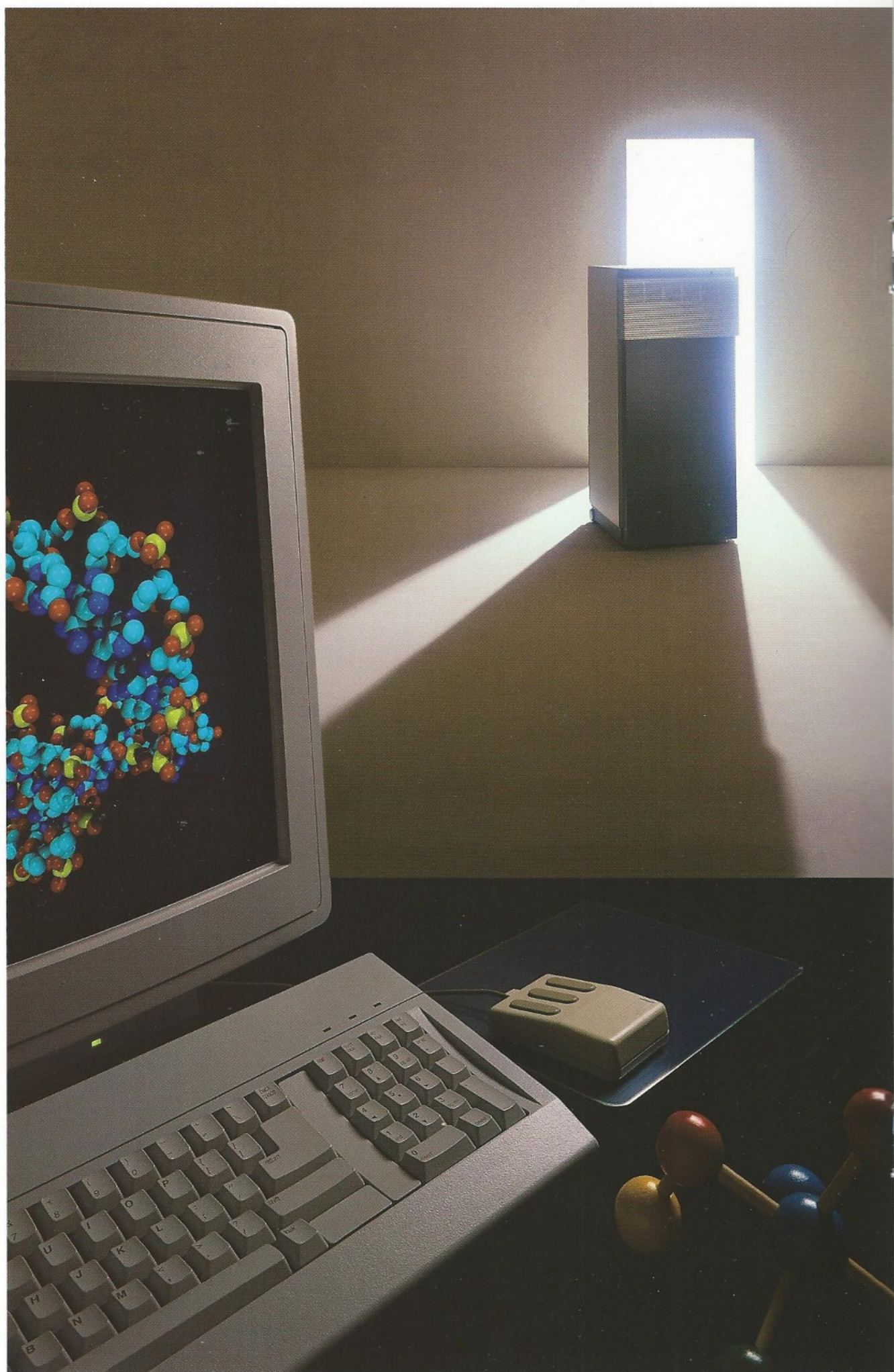
Imagine what all this, integrated in the same system, can do for you.



Eigenfunction of an L-shaped membrane rendered by the Dore™ toolkit.

Graphics supercomputers make the same evolutionary leap over conventional supercomputers that workstations made over minicomputers.





SUPERCOMPUTER POWER WITHOUT SUPERHUMAN EFFORT

SUPERCOMPUTER-CLASS PERFORMANCE. Titan gets its compute power from features proven in the supercomputer mainstream and from innovative architectural elements and technologies.

Titan is a parallel 64-bit vector machine that can be expanded from one to four processors. Each Titan processor contains a vector floating-point unit with a large, configurable vector-register file. Like vector units in traditional supercomputers, Titan uses hardware scatter/gather, mask and compress instructions, high-speed load and store pipes to memory, and other CrayTM-like features. Computations are overlapped in each Titan processor's separate integer and floating-point units.

NUMBERS THAT COUNT

Up to 4	Processors	Up to 52	Image planes
Up to 64	MFLOPS	Up to 128	MB main memory
Up to 64	MIPS	256	MB/second bus bandwidth

INTEGRATED GRAPHICS. Titan supports interactive graphics capabilities—*and reduces machine cost and complexity*—by using its vector and integer units for graphics computation.

This tightly integrated architecture means that with Titan, developers can write graphics routines in C or Fortran; there's no microcode to learn.

All graphics transformations get the benefit of Titan's floating-point performance; there's no fixed pipeline to limit graphics functionality.

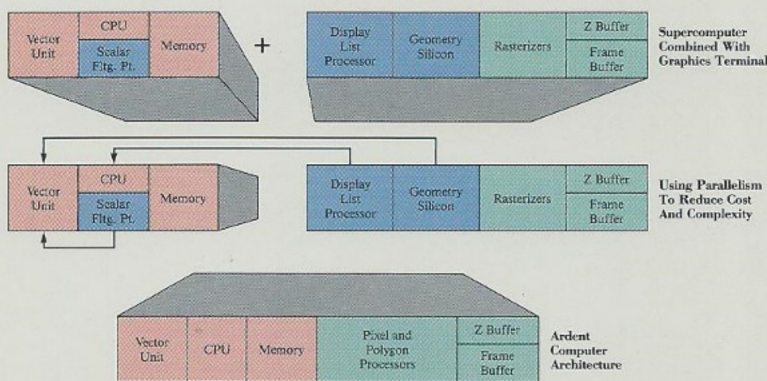
The vector unit that performs graphics transformations and the parallel pixel processors that paint the screen are coupled in the same hardware; there is no communications bottleneck.

Imagine 64 MFLOPS devoted to your application, with 3D, full-color graphics results coming at you so fast you can react intuitively.



The Doré toolkit provides a smooth balance of image realism against computation time.

Titan's general-purpose processors are so powerful they perform graphics transformations faster than specialized geometry silicon.



NEW STRIDES IN COST-EFFECTIVENESS

Ardent Computer designed Titan not only to create a new class of graphic, interactive supercomputing but also to set a new level of cost-effectiveness.

♦ **Titan enhances productivity:**

- ♦ Titan saves you time.
- ♦ Titan helps you find optimal solutions.

♦ **Titan makes supercomputing affordable:**

- ♦ Titan can replace a graphics workstation *and* a minisupercomputer.
- ♦ Titan has the lowest price per MFLOP per user in the industry.

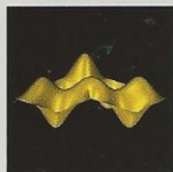
♦ **Titan protects your investment in software:**

- ♦ Your Cray applications run on Titan with minimal change.
- ♦ Your VAX applications run on Titan with minimal change.

♦ **Titan lets you buy what you need and grow:**

- ♦ The Titan family offers modular processors, memory, and graphics.
- ♦ You can expand your system in the field without software changes.

Imagine owning a Titan.



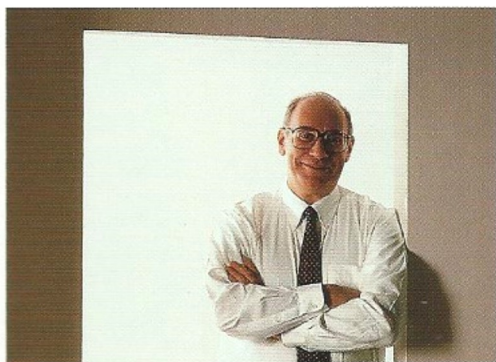
Doré software,
the first super-
computer visual-
ization package,
comes bundled
with every Titan.

Data used in Doré-generated photographs are courtesy of The Math Works of Sherborn, MA., BioDesign Inc. of Pasadena, CA., PDA Engineering of Costa Mesa, CA., and AMI of Seattle, WA.

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A MESSAGE FROM OUR PRESIDENT



At Ardent Computer, our goal is to help the brightest people in research, industry, and government as they attack the most challenging problems of science and engineering.

How can we help you? By providing the finest computing tool ever made: a graphics supercomputer. We believe no other single tool can have so profound an impact on your work or a more pivotal influence on computational science and engineering.

Why are we so sure? Because of the people who created Titan. Our designers are the same people who helped lay the foundations of the industry in machine architecture, compiler technology, mathematical software, processor design, and graphics. Working together as a team, they have built a system and tools ideally suited to your challenges.

We believe you'll agree that Titan can become a crucial partner in your work. In fact, we guarantee it. If you are dissatisfied with your purchase *for any reason*, we'll let you return it, no questions asked. But we think that together, you, Titan, and Ardent Computer can break new ground.

If we've sparked your imagination, call us at (408) 732-0400.

Allen H. Michels
Founder and President



ARDENT

880 W. Maude Ave.

Sunnyvale, CA 94086

(408) 732-0400